



# Lean6Sigma Academy

A DIVISION OF CANSULT, INC.



## Lean Six Sigma Green Belt

Course Number: 03

Online Course Syllabus





### Course Description

#### Course Number: 03

**Module:** Lean Six Sigma Green Belt – Project Selection & Project Kickoff

**Module Description:** This module provides insight into the work that occurs *before* a Green Belt project begins. This module covers the main Sponsor (Blue Belt) milestones and tools for the selection of projects and the project kickoff.

#### Pre-Requisite Modules

0006 Lean Six Sigma - Yellow Belt

### Course Topics

#### 0 Course Introduction

- Meet your instructors
- How to contact us
- Lean Six Sigma Belt Levels (Review)
- The steps to certification
- Course Materials
- Course Topics

#### 1 Project Selection & Kickoff

- Typical Challenges
- The Leadership Cycle 
- Project Approaches
- Your Green Belt Project
- Project Roles
- Team Selection  
- Project Kickoff  

### Course Time & PDUs



**Total Instructional Video: 22 Hours**

**Instructional Video Hours per Module:**

<b>Project Selection</b>	<b>1</b>
Define	3
Measure	4
Analyze	5
Improve	5
Control	4



**Estimated Engaged Time (Active Learning): 42 hours**

**TOTAL Green Belt Course Hours/PDUs = 64 Hours**

Key: Section Includes

 Excel Template

 One-Point Lesson



Course Description	Course Topics	Course Time & PDUs
--------------------	---------------	--------------------

**Course Number: 03**

**Module:** Lean Six Sigma Green Belt – DEFINE Phase

**Module Description:** This module provides complete instruction, practice and templates on how to lead a Root Cause Analysis project using the DMAIC structure and Lean Six Sigma methods and tools. This module covers the DEFINE phase of DMAIC.


**Pre-Requisite Modules**

0006 Lean Six Sigma - Yellow Belt












**2 The DEFINE Phase**

**About the Define Phase**

**High Level Process Map**

- SIPOC High-Level  
- Process Map

**Requirements**

- How Requirements are Used
- Types of Requirements
- Your Project Focus
- How to State Requirements
- Collecting Customer Feedback (Voice of the Customer) 
- Translating Customer Feedback into Requirements
  - Kano Analysis  
  - Tree Diagram  
  - VOC Translation Matrix  
  - Affinity Diagram  
- SIPOC with Requirements  


**Project Charter**  

- Business Case
- Project Timeline
- Team Members & SMEs
- Expected KPIs to Improve
- Problem & Goal Statements
- Project Scope
- Assumptions & Constraints



**Stakeholder Management**

- Identify Project Stakeholders
- Understand Perspectives
- Stakeholder Plan

**Storyboard (Define Phase)**

- When & Why?
- Storyboard template 

**Tollgate Meeting (Define Phase)**

- Purpose
- Tollgate Meeting Agenda  

**Checklist Define Phase** 



**Total Instructional Video: 22 Hours**

**Instructional Video Hours per Module:**

Project Selection	1
<b>Define</b>	<b>3</b>
Measure	4
Analyze	5
Improve	5
Control	4



**Estimated Engaged Time (Active Learning): 42 hours**

**TOTAL Green Belt Course Hours/PDUs = 64 Hours**

Key: Section Includes

 Excel Template

 One-Point Lesson



**Course Description**      **Course Topics**      **Course Time & PDUs**

**Course Number: 03**

**Module:** Lean Six Sigma Green Belt – MEASURE Phase

**Module Description:** This module provides complete instruction, practice and templates on how to lead a Root Cause Analysis project using the DMAIC structure and Lean Six Sigma methods and tools. This module covers the MEASURE phase of DMAIC.

**Pre-Requisite Modules for GB Certification**

0006 Lean Six Sigma – Green Belt DEFINE

**Key: Section Includes**

Excel Template

One-Point Lesson

**3 The MEASURE Phase**

**About the Measure Phase**

- Measures throughout DMAIC
- Measure phase objectives

**About Statistics & Measures**

- What is Statistics?
- Qualitative & Quantitative Data
- Discrete vs. Continuous Data
- Common Baseline Measures
  - DPU
  - DPMO
  - Yield
  - Sigma
  - % Defective
  - First Pass Yield
  - Average
  - Variation

**Data Display**

- Charts to Display Your Baseline
  - Run Chart
  - Control Chart
  - Histogram
  - Box Plot
  - Bar Chart
  - Pareto Chart

**Your Baseline Measure(s)**

- Your Project “Y”
- Your Baseline Measure

**Your Analysis Measures**

- Identify Initial Root Cause Hypotheses
- Brainstorming
- Fishbone Diagram
- Multi-Voting
- Filter Matrix
- Informal Hypothesis Table

**Data Collection**

- Operational Definitions
- Data Collection Plan

**Sampling**

- What is Sampling?
- Establish the Need for Sampling
- Calculate Minimum Sample Size

**Storyboard (Measure Phase)**

- Storyboard template

**Tollgate Meeting (Measure Phase)**

- Tollgate Meeting Agenda

**Checklist Measure Phase**



**Total Instructional Video: 22 Hours**

**Instructional Video Hours per Module:**

Project Selection	1
Define	3
<b>Measure</b>	<b>4</b>
Analyze	5
Improve	5
Control	4



**Estimated Engaged Time (Active Learning): 42 hours**

**TOTAL Green Belt Course Hours/PDUs = 64 Hours**





**Course Description**

**Course Number: 03**

**Module:** Lean Six Sigma Green Belt – ANALYZE Phase

**Module Description:** This module provides complete instruction, practice and templates on how to lead a Root Cause Analysis project using the DMAIC structure and Lean Six Sigma methods and tools. This module covers the ANALYZE phase of DMAIC.

**Pre-Requisite Modules for GB Certification**

0006 Lean Six Sigma – Green Belt MEASURE

**Key: Section Includes**

Excel Template

One-Point Lesson

**Course Topics**

**4 The ANALYZE Phase**

**About the Analyze Phase**

- The 96/4 Rule
- Facts, Hypotheses & Theories

**Hypotheses**

- Hypothesis Statements
- Hypothesis Testing Overview
- Formal Hypothesis Table

**Process Analysis**

- Intro
- Value Stream Map
- Process Observation, “Gemba Walk”
- Parking Lot & Action Items
- Detailed Process Map
- 8 Wastes
- Time & Value Analysis
- Spaghetti Maps
- Document Process Analysis Findings

**Data Analysis**

- Intro
- Inferential vs. Descriptive Stats
- *p*-Value & Statistical Significance
- Interpret & Analyze Data
  - Run Chart
  - Control Chart
  - Histogram
  - Box Plot
  - Bar Chart
  - Pareto Chart
  - Scatter Plot
  - Chi-Square

**Solidify Root Causes**

- Strong vs. Weak Root Causes
- The Root Cause Statement

**Storyboard (Analyze Phase)**

- Storyboard template

**Tollgate Meeting (Analyze Phase)**

- Tollgate Meeting Agenda

**Checklist Analyze Phase**

**Course Time & PDUs**



**Total Instructional Video: 22 Hours**

**Instructional Video Hours per Module:**

Project Selection	1
Define	3
Measure	4
<b>Analyze</b>	<b>5</b>
Improve	5
Control	4



**Estimated Engaged Time (Active Learning): 42 hours**

**TOTAL Green Belt Course Hours/PDUs = 64 Hours**



**Course Description**      **Course Topics**      **Course Time & PDUs**

**Course Number: 03**

**Module:** Lean Six Sigma Green Belt – IMPROVE Phase

**Module Description:** This module provides complete instruction, practice and templates on how to lead a Root Cause Analysis project using the DMAIC structure and Lean Six Sigma methods and tools. This module covers the IMPROVE phase of DMAIC.

**Pre-Requisite Modules for GB Certification**

0006 Lean Six Sigma – Green Belt ANALYZE

**Key: Section Includes**

- Excel Template
- One-Point Lesson

**5 The IMPROVE Phase**

**About the Improve Phase**

- About Innovative Solutions
- The Path Through Improve

**Proven Solutions**

- 5S
  - Sort
  - Shine
  - Set in Order
  - Standardize
  - Sustain
  - 5S Planner
  - 5S Assessment
- Kanban
- Just-in-Time
- Load-Leveling (Heijunka)
- Work Cell Design
- The Visual Workplace
- A Word About Automation

**Beyond Brainstorming**

- Brainstorm List
- Anti-Solution
- Mind Map
- Channeled Brainstorming
- Analogy Brainstorming
- Strong, Moderate, Weak Solutions

Assumption Busting

The Solution Statement

**Select the Solution**

- Filter Matrix
- Criteria Matrix for Solution Selection

**Design the Future State**

- Future State Process Maps
- Job Aids, Checklists, Visual Aids
- RASCI Assignment Matrix
- Mistake-Proof (Poka Yoke)
- Unintended Consequences

**Implement the New Way**

- Pilot the Solution
- Pilot Planning Checklist
- Plan to Implement
- The Improve Checklist

**Storyboard (Improve Phase)**

- Storyboard template

**Tollgate Meeting (Improve Phase)**

- Tollgate Meeting Agenda

**Checklist Improve Phase**



**Total Instructional Video: 22 Hours**

**Instructional Video Hours per Module:**

Project Selection	1
Define	3
Measure	4
Analyze	5
<b>Improve</b>	<b>5</b>
Control	4



**Estimated Engaged Time (Active Learning): 42 hours**

**TOTAL Green Belt Course Hours/PDUs = 64 Hours**



Course Description	Course Topics		Course Time & PDUs
--------------------	---------------	--	--------------------

**Course Number: 03**

**Module:** Lean Six Sigma Green Belt – CONTROL Phase

**Module Description:** This module provides complete instruction, practice and templates on how to lead a Root Cause Analysis project using the DMAIC structure and Lean Six Sigma methods and tools. This module covers the CONTROL phase of DMAIC.

**Pre-Requisite Modules for GB Certification**

0006 Lean Six Sigma – Green Belt IMPROVE

Key: Section Includes

 Excel Template



 One-Point Lesson

**6 The CONTROL Phase**



**About the Control Phase**

- The Path through Control
- Preventive vs. Contingent
- Scale of Control Plans


**Validate Results**

- Time between Implementation and Results
- Impact of Human Behavior
- Display Before and After
- Recalculate Control Limits
- Validate Results  



**Finalize Process Documentation**

- Requirements for valuable documentation
- Finalize Process Documentation  



**Visual Performance Management**

- Leading & Lagging Indicators
- Select Ongoing Measures
- Data Collection Plan (Review)
- Physical or Digital
- VPM Meetings
- VPM Response Plan 
- Visual Performance Management


**Service Level Agreements**

- Observable Behaviors
- Service Level Agreements  



**Leader Standard Work**

- Tiers of the Organization
- Misconceptions
- Leader Standard Work  

**Storyboard (Control Phase)**

- Storyboard template 

**Tollgate Meeting (Control Phase)**

- Tollgate Meeting Agenda  

**Checklist Control Phase **

**Reflect, Close, Celebrate**



**Total Instructional Video: 22 Hours**

**Instructional Video Hours per Module:**

Project Selection	1
Define	3
Measure	4
Analyze	5
Improve	5
<b>Control</b>	<b>4</b>



**Estimated Engaged Time (Active Learning): 42 hours**

**TOTAL Green Belt Course Hours/PDUs = 64 Hours**